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DEVICE FOR RECEIVING STATIC IMAGES AND DYNAMIC IMAGES

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DEVICE FOR RECEIVING STATIC IMAGES AND DYNAMIC IMAGES

[Seishiga doga shushin sochi]

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[There are no amendments to this patent.]

Claim

A device for receiving static images and dynamic images, characterized by the fact that in a device that assumes at least one frame of a video signal as a unit and receives a multiplex transmission signal of a static image, in which an address signal of a reception terminal is overlapped with the video signal, and a dynamic image signal, it is equipped with a static image recording controller that compares the above-mentioned address signal with one's own terminal address at the time the static image is received and outputs a signal when both of them are matched, a static image recording device that sets the static image signal to be recorded by the output of the static image recording controller and projects the recorded static image signal on a television monitor, a means that directly projects the dynamic image on the television monitor at the time the dynamic image signal is received, sets parts of the dynamic image signal to be

recorded by giving a recording instruction signal to the above-mentioned static image recording device, and projects it on the television monitor, a detection means that detects reception of the static image signal, and a means that controls the above-mentioned recording instruction signal by the output signal of the detection means so that it may not be given to the above-mentioned static image recording device when the static image signal is received.

Detailed explanation of the invention

The present invention pertains to a device that can receive a static image signal and a dynamic image signal being sent from a center at a terminal, and erroneous operation of the device is removed by a manual operation when the static image signal is received.

Figure 1 is a block diagram showing a conventional example of a transmission and reception system that includes a device for receiving static and dynamic images. Center A and a terminal B are connected by coaxial cables 1a and 1b, the signal transmitter of center A is controlled in accordance with the request of terminal B, and a requested signal is sent to terminal B.

Here, cable 1a is used for transmitting a center signal, and cable 1b is used for transmitting a requested data signal from terminal B. Center A consists of center control device 2 that receives a requested data signal from a terminal and controls each transmitter of the center in accordance with the request, dynamic image transmitter 3 that delivers a dynamic image service, static image transmitter 4 that delivers a static image service, an address signal generator 5 that adds the address code of the requested terminal to the signal of the static image transmitter 4, address adder 6, a channel switching signal generator 7 that automatically switches the channel of a television signal demodulator of the terminal for a requested program, television signal modulators 8 and 9 that modulate each transmitting video signal, and a mixer 10 that mixes the output signals of each television signal modulator. All of the above-mentioned 3, 4, 5, and 7 are controlled by the center control device 2. Next, the constitution of terminal B is explained. It consists of channel switching controller 11 that switches the channel of the television signal demodulator using the output of television channel switching signal generator 7 as an input signal, television signal demodulator 12 that demodulates the television signal, television monitor 13 that monitors the output of the television signal demodulator 12, static image recording device 14 that records the static image transmitting signal and reproduces it as a static image on television monitor 13, static image recording controller 15 that controls static image recording device 14, keyboard 16 that transmits the data requested, OR gate 18, T type flip-flop 17, and changeover switches 19 and 20. In the above-mentioned constitution, if a dynamic image is requested, the terminal number and the request content for the requested data of keyboard 16 are discriminated by center control device 2, and dynamic image transmitter 3 is operated by the

results. At the same time, a signal for switching the channel of the television signal demodulator is transmitted to the requested terminal by channel switching signal generator 7.

Said channel switching signal is FSK (frequency shift keying), and the requested data signal is PSK (phase shift keying). These signals are transmitted at each designated frequency. Next, the terminal receives the channel switching signal, and the channel of television signal demodulator 12 is switched to a dynamic image channel by channel switching controller 11 and introduced into television monitor 13 through switches 19 and 20, so that the requested dynamic image is received. In Figure 1, 21 is an audio signal line.

Also, the above-mentioned channel switching signal, as shown in Figure 2, consists of terminal address code T, channel codes C_1 (for the single numeral) and C_2 (for numeral representing ten through ninety), and other control codes (start bit S, even parity G, and stop bit ST). Therefore, channel switching controller 11 switches television signal demodulator 12 to a designated channel only when the terminal address in the channel switching signal is matched with one's own address. Channel switching controller 11 consists of the FSK demodulator, address comparator, register, and decoder, and as shown in Figure 3, a terminal address introduced into terminal 22 is compared in an address comparator 23. When it is matched with one's own terminal address, the channel code signal is stored in register 24 and decoded by decoder 25.

If a static image is received, the static image is requested by keyboard 16. Channel switching signal generator 7 and channel switching controller 11 are operated similarly to the dynamic request, and television signal demodulator 12 is switched to a static image channel.

On the other hand, since changeover switch 19 is automatically set to static image recording device 14, the reproducing signal of static image recording device 14 is shown on television monitor 13. In the static image transmission method of this system, a time-division transmission method is used to raise the curve efficiency, and at least one frame of the static image signal requested is transmitted as one unit. Therefore, as the output of television signal demodulator 12 at the time the static image is received, as shown in Figure 4, different video signals are sent to each frame. Therefore, the terminal must discriminate the requested static image from the output of television signal demodulator 12 and record it in static image recording device 14. For this reason, the address signal of the requested signal is overlapped in this system with the static image signal being transmitted, and the terminal discriminates the address signal, so that a recording instruction is output and the requested static image signal is shown on the television monitor via static image recording device 14. In Figure 1, 15 is a static image recording controller for discriminating the address signal, 5 is an address signal generator, and 6 is an address adder for overlapping the address signal. In Figure 4, e, f, and g are address signals, and address signal e is added to video signal b, address signal f is added to video signal c, and

address signal g is added to video signal d. Figure 5 gives more detail of the address signal, showing an address signal A inserted into a vertical blanking period. If one's own designated address is detected by static image recording controller 15, the detected signal is passed through OR gate 18 and sets static image recording device 14 to record. The signal recorded is projected on television monitor 13 through changeover switches 19 and 20.

This system has a manual memory function of dynamic images, and if a snap switch in keyboard 16 is pressed, the output of static image recording device 14 is shown on television monitor 13. If the switch is pressed, the output of the television signal demodulator 12 is shown. The manual recording instruction signal pressed by keyboard 16 is added to T-type flip-flop 17 through OR gate 18 and inverted, and switch 20 is switched to the lower side. If the manual recording instruction signal is re-inputted, T-type flip-flop 17 is re-inverted and returned to its original state.

In the above system, at the time the dynamic image is received, the dynamic image signal being shown on television monitor 13 can be reproduced as a static image; however, if the snap is pressed when the static image is received, as mentioned above, the output of television signal demodulator 12 when the static image is received adopts the time-division method for static image signal transmission, the image at the moment of the snap press is recorded, erasing the recorded signal being requested, and a signal irrelevant to the request is recorded.

The present invention prevents recording due to erroneous operation during the above-mentioned static image reception, as explained in application example of the present invention, referring to the figures.

Figure 6 shows the application example of the present invention. The same numbers are given to the same parts as those of Figure 1, and their explanations are omitted. As the characteristic of this device, the recording instruction signal obtained by pressing the snap of keyboard 16 and the detected signal of the received static image obtained by channel switching controller 11 is inverted by inverter 22, added to AND gate 23, and static image recording device 14 is controlled by the AND output of both of them.

The channel of the tuner of television signal demodulator 12 is switched by the channel switching signal from the center A as mentioned above, and the signal appears at a specific position of the decoder of channel switching controller 11. Therefore, if a static image is transmitted by 1 ch and the static image is requested by the terminal, a positive signal appears at 1 ch of the decoder of channel switching controller 11. This signal indicates that the received signal is detected as a static image, and this signal is inverted by inverter 22 and added to AND gate 22 with the signal of keyboard 16. Thus, the AND output becomes a signal for controlling the static image recording device 14 by manual operation of the snap button of keyboard 16 so that the recording device may not be set to record when the static image is received.

As mentioned above, according to the present invention, if a static image is received, even if a recording instruction signal is mistakenly given by manual operation of the keyboard, the static image recording device is not set to a record, eliminating this type of an erroneous operation.

Brief description of the figures

Figure 1 is a block line diagram showing a system including a conventional device for receiving static and dynamic images. Figure 2 shows signals being processed in this system. Figure 3 is a block line diagram showing part of the device. Figures 4 and 5 are respectively waveform diagrams showing the signals being used in the system. Figure 6 is a block line diagram showing a system including the device for receiving static and dynamic images in an application example of the present invention.

- 11 Channel switching controller
- 12 Television signal demodulator
- 13 Television monitor
- 15 Static image recording controller
- 16 Keyboard
- 14 Static image recording device
- 18 OR gate
- 17 Flip-flop
- 19, 20 Changeover switches
- 22 Inverter
- 23 AND gate

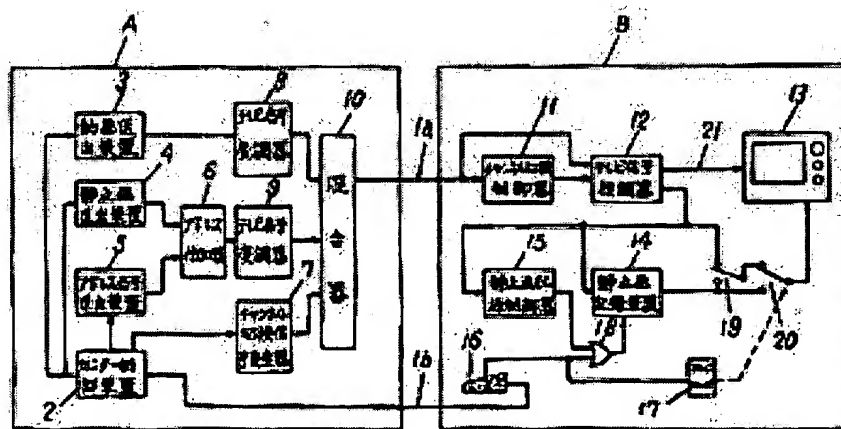


Figure 1

- Key: 2 Center control device
 3 Dynamic image transmitter
 4 Static image transmitter
 5 Address signal transmitter
 6 Address adder
 7 Channel switching signal generator
 8 Television signal modulator
 9 Television signal modulator
 10 Mixer
 11 Channel switching controller
 12 Television signal demodulator
 14 Static image recording device
 15 Static image recording controller
 16 Keyboard
 17 Flip-flop

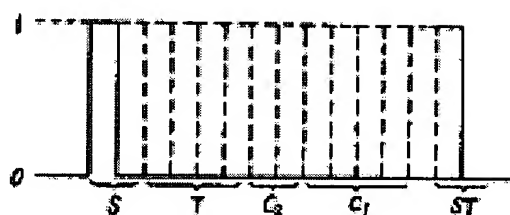


Figure 2

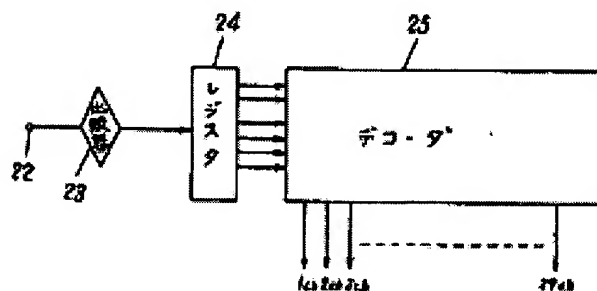


Figure 3

- Key: 23. Comparator
 24 Register
 25 Decoder

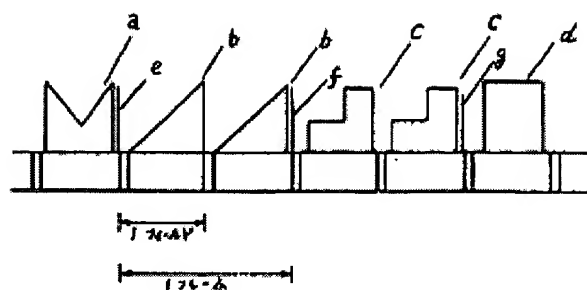


Figure 4

Key: 1 1 field
2 1 frame

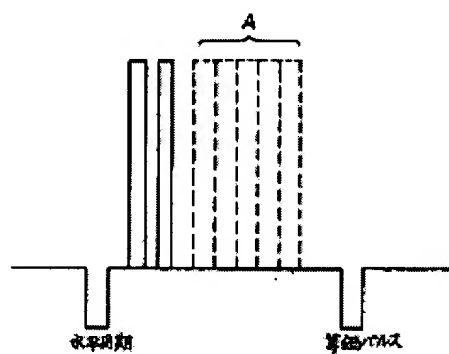


Figure 5

Key: 1 Horizontal synchronization
2 Equivalent pulse

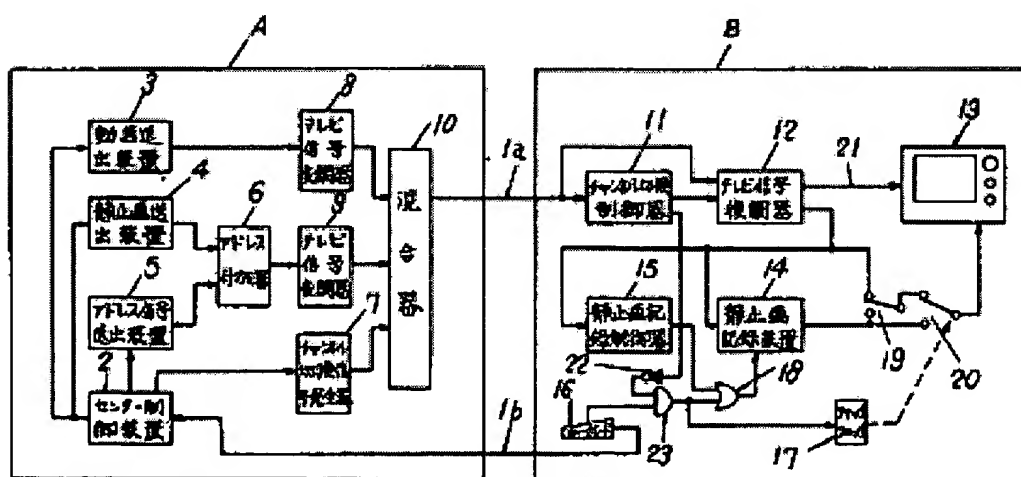


Figure 6

Key:	2	Center control device
	3	Dynamic image transmitter
	4	Static image transmitter
	5	Address signal transmitter
	6	Address adder
	7	Channel switching signal generator
	8	Television signal modulator
	9	Television signal modulator
	10	Mixer
	11	Channel switching controller
	12	Television signal demodulator
	14	Static image recording device
	15	Static image recording controller
	16	Keyboard
	17	Flip-flop